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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,296	11/25/2003	Alnasir Ladha	11312	9107

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JAMES M. STOVER
TERADATA CORPORATION
2835 MIAMI VILLAGE DRIVE
MIAMISBURG, OH 45342

EXAMINER
KUDDUS, DANIEL A

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/722,296	LADHA ET AL.
Office Action Summary	Examiner	Art Unit	
	Daniel Kuddus	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 October 2007</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>8-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>8-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>25 November 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR
1.17(e), was filed in this application after final rejection. Since this application is eligible for
continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been
timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR
1.114. Applicant's submission filed on September 20, 2007 has been entered.

Rejection under 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the
differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious
at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims

under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was

commonly owned at the time any inventions covered therein were made absent any evidence to

the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor

and invention dates of each claim that was not commonly owned at the time a later invention was

made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35

U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein et al. (US

6453313 B1) ('Klein' herein after) and further in view of Reed et al. (US 5862325 A) ('Reed'

herein after).

With respect to claim 8,

Klein teaches a method to manage interactions between applications and a data

store (see Figs. 6, 15), comprising:

receiving a query for a data store and an identifier for an application, wherein the application

when executed seeks to process results returned from and produced by executing the query and

seeks to update the data store with application data, wherein the application data is produced in

response to the application processing the results of the query (The fan out operator sends this

request 'query' to each table partition, and receives in response all records that satisfy the cursor.

The request is non-blocking because the fan out operator does not want or need to receive

records added 'update' to the table partition after the request is made. This type of request is used

for streaming, read only access (i.e., for streaming operators that do not delete or update tuples).

This type of request is sent by the fan out operator to all of the partition scan operators so as to

automatically retrieve rows as they are inserted or updated in the table. The delete and update

features of the present invention provide a destructive read capability and a "read modify write"

capability in conjunction with streaming access to a database table. This allows queuing services

to be provided by a relational database system while preserving the ability of the DBMS to

perform other relational operators on the result set returned. The result sets created by the delete

and update access operations of the present invention can be joined with the result sets of other

table access operators, which enables efficient data processing through the use of delete and/or

update operations embedded in a query, see col.15, lines 48-60, column 16, lines 66 to column

17, lines 6, column 18, line 12-15, Figs.15, 18, Klein),

    concurrently executing_initiating multiple instances of an application associated with the

identifier on multiple processing nodes within a network to achieve parallel processing for the

multiple instances of the application (tables in the database are partitioned, with various

partitions being stored on different nodes of the relational database system. Such partitioning is

often used for extremely large tables. Various tables within a database are stored on different

nodes of the system. Such distributed storage facilitates efficient, parallel 'concurrent' processing

of queries, by distributing both the disk I/O and computational burden over multiple nodes. The

"application process" represents the process or processes that execute not only the application

program, but also the portions of the execution tree above the leaf nodes. The leaf nodes are

executed by disk processes in each of the nodes of the transaction processing system. While one

disk process for each node, the number of disk processes per node may vary from one

implementation to another. A separate disk process may be used for each logical disk volume.

Destructive reads are sometimes used to ensure that an item is processed exactly once. For

instance, several "credit evaluation" processes might be assigned the job of reading and

processing credit applications. Each such process could use a destructive read (i.e., delete

operation with result set) to read a next credit application record for processing. The credit

evaluation processes work in parallel, without interfering with each other, see col. 5, lines 51-67,

column 6, line 57-62, column 14, line 42-58, column 17, line 9-16, Klein).

concurrently processing the query to acquire the results on behalf of the multiple instances of

the application (the delete and update features of the present invention provide a destructive read

capability and a "read modify write" capability in conjunction with streaming access to a

database table. This allows queuing services to be provided by a relational database system while

preserving the ability of the DBMS to perform other relational operators on the result set

returned. The result sets created by the delete and update access operations of the present

invention can be joined with the result sets of other table access operators, column 5, line 51-67,

column 16, line 66 to column 17, line 5, column 18, line 12-16, Klein), producing housing the

results that are then housed in one or more application queues residing on one or more of the

processing nodes (data flows between the nodes of the execution tree are handled by the use of a

pair of queues, between parent and child nodes. In particular each parent node is coupled to a

child node by a request queue and a fetched records queue. The request queue stores requests

being conveyed from the parent node to its child node, while the fetched records queue conveys

data and return codes (e.g., an end of file or end of scan code) being returned to the parent node

in response to the requests (see col. 6, lines 1-10, Klein).

concurrently providing the results to each of the instances of the application from the one or

more application queues so that the instances can produce the application data from the results

and update the data store with the application data, which is to be subsequently accessed from

the data store (the request queue and a fetched records queue are used by the transaction

processing system to pre-fetch records not yet requested by the application that submitted the

query being processed. Each node in the execution tree other than the leaf nodes are

automatically configured to request as many records as can be stored in the fetched records

queue(s) between it and its child or children nodes, even if such records have not yet been

requested by the application. Pre-fetching can improve system performance, by making use of

otherwise dormant system resources, and can improve system responsiveness by having data

ready for the application before it requests it, unbound pre-fetching must be suppressed when

executing an embedded delete or update statement. The application must control how many rows

are to be affected by the delete or update operation, and therefore the database management

system must only delete or update those records actually requested by the application, SQL

compiler includes in the code for any update, delete or insert operator (generically herein called a

table access operator) code for generating a before and after image for each modified and new

tuple. SQL compiler of the present invention the image generation code includes code for

updating one or more fields of the Before Image when the query being compiled includes a "set

on rollback" clause that affects the table being accessed by this operator. When the Before and

After Images are passed by the table access operator to the transaction log manager, the before

image contains one or more modified fields if the query being executed contained a

corresponding "set on rollback" clause, see col. 13, lines 64 to col. 14, lines 6, column 19, line

17-35, Klein).

Klein explicitly does not teach 'each application queue having different portions of the results'.

However, Reed teaches 'each application queue having different portions of the results' (see

column 34, line 3-6, these transmissions can be queued using scheduled events to reduce system

load, column 45, line 35-37, scheduled objects are communications objects used to represent

scheduled events, column 90, line 62-65, maintaining the queue of event instances, column 23,

line 40-44, the event class is an abstract class defining the attributes for scheduled events, used to

create a queue of events, column 8, line 11-14, results in an updated version is transferred,

column 26, 53-56, result of a manual request or it can be transferred directly to the consumer

program as a result of automatic event processing, column 47, line 6-8, results in specific pages

being assigned to the communications object instance that will transmitted, column 155, line 61-

65, transferring at least a portion of the updated information, column 156, claim 92, column 75,

line 17-21, 'thread' of message can be passed back and forth, column 75, line 41-49, column 94,

line 43-53, see col. 19, line 2-6, line 31-35, col. 94, line 43-53, Reed). Note: Reed teaches data

(or object) on all or portion of the data is being transmitted, the transmission result is loaded or

scheduled in a queue, while result (or update) have different portion as well.

Klein provides a relational database system that has been extended to perform operations on a

continuous stream of tuples (see column 1, line 19-23). While, Reed teaches an automated

communications system which coordinates the transfer of data, metadata, and instructions

between databases in order to control and process communications (column 1, line 11-14). One

of ordinary skill in the art at the time of the invention would have been motivated by Reed to

improve the relational database system that has been extended to perform operations on a

continuous stream of tuples of Klein for a communications system which allows providers and

consumers to easily share access to many common communications services.

Therefore it would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which said subject matter pertains to have modified the teaching of

Klein by applying the teaching of Reed for transmitted communications object instance can be

automatically received, processed, stored and indexed by the consumer program, hence data can

be easily searched using consumer program in order to locate specific information or perform

certain function, as taught by Reed in column 34, line 49-56.

As to claim 9,

Klein teaches concurrently housing the application data in one or more load queues residing on

one or more of the processing nodes (see col. 14, lines 59-63, Klein); and concurrently

populating one or more tables residing on one or more of the processing nodes with the

application data from the one or more load queues (see col. 14, lines 59-63, Klein).

As to claim 10,

Klein teaches merging the one or more tables into the data store (see col. 3, lines 15-18, Klein).

As to claim 11,

Klein teaches wherein the currently initiating further includes determining a total number of the

applications to initiate based on configuration data (see col. 6, lines 1-10, Klein).

As to claim 12,

Klein teaches wherein the currently initiating further includes determining which of a number of

the applications that are to be initiated on which of a number of the processing nodes based on

the configuration data (see col. 14, lines 10-15, Klein).

As to claim 13,

Klein teaches concurrently synchronizing the application queues and the load queues on the

multiple processing nodes when at least some of the processing nodes lack one of the one or

more application queues or one of the one or more load queues (see col. 14, lines 59-63, Klein).

As to claim 14,

Klein teaches wherein the concurrently synchronizing further includes establishing socket based

communications between the multiple processing nodes with a Transmission

ControlProtocol/Internet Protocol (TCP/IP) (see col. 19, lines 30-35, Klein).

Claims 15-25 have the same subject matter except temporary tables, data warehouse, query

results extraction and different portion of the results are provided to each of the applications for

parallel processing of the results and Klein teaches at (the "stream" keyword is used to indicate

that the execution of the query is to continue even after the end of the table is reached. It

processes all new entries inserted into the table as they are added. The next portion of this

document will describe the data structures and procedural mechanisms used to in a preferred

embodiment to perform (i.e., execute) a streaming query. The fan out operator extracts tuples

from the partition scan operators in a order specified by the calling application during the initial

scan, see column 8, line 43-52, col. 11, lines 11-17, lines 47-55, col. 15, lines 26-35, lines 66 to

column 16, line 1-11, and line 58-65 et seq.,). Therefore, claims 15-25 are essentially rejected

for the same reasons as discussed above.

Response to Arguments

Applicant's remarks and arguments presented on October 17, 2007 have been fully considered

but they are moot in view of the new grounds of rejection presented in this office action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kerwin et al. (USP, 6,898,609) teaches all the limitations especially "provides a software

method, for network database environments, permitting load balancing, scalability and

substantially simultaneous use by client users, comprising the steps of: providing multiple

database instances wherein each such instance is substantially identical in data content, database

structure, and primary key system; maintaining substantially real time records of status for each

such multiple database instance; receiving a database query from at least one end-user

application and determining such query to be a transactional query or non-transactional query;

directing such database query to at least one selected instance of such multiple database instances

upon a determination of such query being a non-transactional query; returning such non-

transactional query results to the at least one end-user application; directing such database query

to all instances of such multiple database instances upon a determination of such query being a

transactional query; controlling such transactional queries to maintain substantial identicalness

among such multiple database instances; propagating such transactional queries to such multiple

database instances; returning such query results to the user; recognizing a failure in at least one

instance of such multiple database instances, and adjusting to store such transactional query for

later propagation; restoring such failed at least one instance of such multiple database instances

to substantial identicalness with other such multiple database instances. Moreover, it provides

such a method wherein each such non-transactional query is executed upon a randomly selected

instance of such multiple database instances. Additionally, it provides such a method wherein the

processing of such non-transactional query commands as directed by a plurality of users is

substantially simultaneous" see col. 5, lines 1-25, and col. 7, lines 1-16, Kerwin et al.

Contact Information

Any inquiry concerning this communication or earlier communication from the examiner

should be directed to Daniel A Kuddus whose telephone number is (571) 270-1722. The

examiner can normally be reached on Monday to Thursday 8.00 a.m.-5.30 p.m. The examiner

can also be reached on alternate Fridays from 8.00 a.m. to 4.30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Pierre

M. Vital can be reached on (571) 272-4215. The fax phone number for the organization

where this application or processing is assigned is 571-273-8300. Information regarding the

status of an application may be obtained from the Patent Application Information Retrieval

(PAIR) system. Status information for published applications may be obtained from the either

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866-217-9197 (toll free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-9199 (IN USA OR

CANADA) or 571-272-1000.

Daniel Kuddus

Date: 01/12/08

CHARLES RONES
SUPERVISORY PATENT EXAMINER

/CDL/